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EXAMINER

RALIS, STEPHEN J

ART UNIT	PAPER NUMBER
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3742

NOTIFICATION DATE	DELIVERY MODE
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11/17/2008

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/523,113	Applicant(s) CHAN, WING KIN	
	Examiner STEPHEN J. RALIS	Art Unit 3742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 August 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 6-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 6-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 2/3/2005, 12/4/2006 and 8/8/2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Applicant is respectfully requested to provide a location within the disclosure to support any further amendments to the claims due to when filing an amendment an applicant should show support in the original disclosure for new or amended claims. See MPEP § 714.02 and § 2163.06 ("Applicant should specifically point out the support for any amendments made to the disclosure.").

Response to Amendment/Arguments

3. Applicant's arguments, see pages 7-9, filed 05 August 2008, with respect to the specification and claims 1-17 have been fully considered and are persuasive. The objection under 35 U.S.C. 132(a) and the 35 U.S.C. 112, first paragraph rejection have been withdrawn.
4. Applicant's arguments filed 05 August 2008 have been fully considered but they are not persuasive as set forth below.

Claim Objections

5. Claim 9 is objected to under 37 CFR 1.75 as being a substantial duplicate of claim 8. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1-3 and 6-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation of "an alternating current power supply" in lines 2-3 and 17-18. It is unclear and uncertain to the examiner to whether there is one or two "alternating current power" supplies. The claims were examined as a single "alternating current power supply". Further clarification is required.

8. Claim 1 recites the limitation "said display means" in line 19. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

Art Unit: 3742

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 1-3 and 12-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Polaert et al. (U.S. Patent No. 5,790,749) in view of Walter et al. (U.S. Patent No. 4,260,875), Harris et al. (U.S. Patent No. 6,393,718) and Schilling et al. (U.S. Patent No. 5,396,047).

Polaert et al. disclose a hair dryer including a main housing (10), a motor, a motor driven fan (air circulation means 13 including a motor M; see Figure 1), an air heating mechanism (14), control mechanism (18), a thermal sensor (detector for heat radiation 20), the main housing defining an air-passageway having an air-inlet and an air-outlet (see Figure 1), the air heating mechanism (14) being disposed intermediate the air-inlet and the air-outlet (heating element 14 disposed between inlet 11 and outlet 12; see Figure 1) and being power by an alternating current (electric power supply 16; see Figure 1), the thermal sensor (detection mechanism 20) being disposed adjacent to the air-outlet and providing temperature information to the control mechanism (18) (column 2, lines 48-55), the control mechanism (18) including memory for storing temperature information and a means for comparing the temperature information received from the thermal sensor with pre-stored temperature information, the control mechanism (18) and air heating mechanism (14) being arranged to reduce heating power output according to a pre-determined manner when the received temperature

Art Unit: 3742

information indicating a temperature exceeds a pre-determined threshold (column 2, lines 48-55; column 3, lines 7-11, 52-58; column 4, lines 1-6).

Polaert et al. disclose all of the limitations of the claimed invention, as previously set forth, except for calling for the specific structure of the air heating mechanism having a first and second heating element; and the thermal sensor including a negative temperature coefficient ("NTC") device.

However, a hair dryer having a first and second heating element, as described by Walter et al., is known in the art. Walter et al. teach an air heating mechanism comprising several heater coils (21) supported on a heater support board (22) (column 2, lines 33-35). Such an arrangement provides for an even distribution of heat to the forced airflow of the hair dryer, thereby improving the efficiency of the device. In addition, Walter et al. teach the use of a negative temperature coefficient (NTC) resistor as a temperature-sensing device (column 2, lines 59-62). Such an arrangement or material provides the thermal sensor the ability to provide a resistance responsive to a temperature, thereby easing temperature determination.

In addition, Polaert et al. discloses all of the limitations, as previously set forth, except for the hair dryer having built-in ionizer; a visual display means on said main housing for indicating instantaneous operating conditions of said hair dryer; and the display means including graphical representations showing operating conditions of said hair dryer, said operating conditions including an indication of at least one of two fan speed levels of the hair dryer when the hair dryer is turned on and an operation status of a built-in ionizer of the hair dryer.

However, an ion generator in a hair dryer, as described by Harris et al., is known in the art. Harris et al. teach the utilization of a built-in ionizer to neutralize the ions that damage hair and promote the hair drying process while reducing the amount of heat required. Harris et al. further teach that at the same time charged ions fortify the hair. As a result the hair is more manageable and looks and feels better and thicker (column 1, line 64 – column 2, line 6).

Similarly, displaying the fan speed level and the operation status of a built-in ionizer in a graphical representation, is known in the art. Harris et al., for example, teach a display means (control panel 5) comprising a graphical representation of the fan speed (blower speed indicator lights 7a, 7b, and 7c in a tiered configuration; see Figures 1, 3) and the operation status of a built-in ionizer (ionizer indicator light 6a based on activation of ionizer switch 6; column 2, lines 63-67; column 3, lines 1-6; see Figure 1, 3) to provide independent control and visualization of such control to the user, thereby providing an ease to use hair dryer over prior hand held hair dryers (column 2, lines 26-37).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the generic air heating mechanism of Polaert et al. with the heater coils and support board of Walter et al. to arrangement provide an even distribution of heat to the forced air flow of the hair dryer, thereby improving the efficiency of the device. Further in view of Walter, It would have been obvious to one of ordinary skill in the art at the time of the invention to modify a generic temperature detection mechanism with an NTC thermistor to supply a thermal sensor with the ability to provide a

Art Unit: 3742

resistance responsive to a temperature, thereby easing temperature determination. In addition, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Polaert et al. with the ion generator of Harris et al. to provide a hair dryer that requires less time and uses less electricity as well as allowing the hair to be more manageable and look and feel better and thicker. Similarly, it would have further been obvious to one of ordinary skill in the art at the time of the invention was made to modify indicator light of Polaert et al. with the control panel indicator functionality of Harris et al. to provide independent control and visualization of such control to the user, thereby providing an ease to use hair dryer over prior hand held hair dryers.

Polaert et al. in view of Walter and Harris et al. discloses all of the limitations, as described above, except for reducing heating power output to the first and second heating elements by a non-dissipative power reduction scheme upon detection of received temperature information, said non-dissipative power reduction scheme including selectively turning on and off said heating elements alternately and repeatedly at zero-crossings of an alternating current power supply during a power reduction operation.

However, reducing heating power output to first and second heating elements by a non-dissipative power reduction scheme upon detection of received temperature information, as described by Schilling et al., is known in the art. Schilling et al. teach a an inner resistive heater (4) and outer resistive heater (3) being differently regulated by a control unit (10) such that the supplied power is periodically switched over and distributed in very short, but variable time intervals a continuously alternating manner

Art Unit: 3742

(Abstract; column 6, line 57 – column 7, line 26). Note: Upper plane during power supply of the outer heater (3) and in the lower plane during power supply of inner heater (4) would switch power between the units at “zero-crossing points”, hence the definition of heater usage relative to upper/lower plane power supply alternating current. Schilling et al. further teach such an arrangement provides 1) the advantage of heating two heating surfaces/elements continuously with the total power consumption remaining substantially constant (column 1, line 60, column 2, line 6); and 2) a method of maintaining a constant temperature, independent of heat removal (column 1, lines 55-60). In view of Schilling, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the temperature control of the heater coils with the continuously alternating reciprocating of the power supply to heating elements to provide a method of maintaining a constant temperature, independent of heat removal, and have a substantially constant total power consumption rate, thereby providing a more efficient and safer heater.

With respect to the limitation of claim 3 and the first and second heating elements being turned on and off at zero-crossings of said alternating current power supply so that said first and second heating elements are actuated respectively at positive and negative portions of said alternating current power supply, Polaert discloses an automatic control means (control mechanism 18; see Figure 4) having a plurality of predetermined patterns (column 3, lines 7-57; see Table 1) corresponding to a plurality of heating power and fan speeds (curve 25 – power; curve 27 – air flowrate/fan speed). Walter et al. teach an air heating mechanism comprising several heater coils (21)

Art Unit: 3742

supported on a heater support board (22) (column 2, lines 33-35). Schilling et al. teach an inner heater (4) and outer heater (3) being differently regulated by a control unit (10) such that the supplied power is periodically switched over and distributed in very short, but variable time intervals a continuously alternating manner. Since the Polaert et al. in view of Walter et al. and Harris et al. teaches two heating coils and a fan being controlled based on a plurality of predetermined patterns, Polaert et al. in view of Walter et al. and Harris et al. and further in view of Schilling would provide for further temperature maintaining control of the heating elements based on the continuous alternating reciprocating of the power supply to heating elements. Therefore, the Polaert et al. in view of Walter et al. and Harris et al. and further in view of Schilling control structure fully meets “the first and second heating elements being turned on and off at zero-crossings of said alternating current power supply so that said first and second heating elements are actuated respectively at positive and negative portions of said alternating current power supply” given its broadest reasonable interpretation.

With respect to the limitations of claims 13-15, Polaert et al. in view of Walter et al., Harris et al. and Schilling discloses all the limitations, as described above, except for the non-dissipative scheme includes the turning on and off of the first heating element during positive half-cycles of an alternating power supply and the turning on and off of the second heating element during negative half-cycles of the alternating power supply. It would have been an obvious matter of design choice to turn on and off the first heating element during positive half-cycles of an alternating power supply and the turn on and off of the second heating element during negative half-cycles of the alternating

Art Unit: 3742

power supply, since Applicant has not disclosed that turning on and off of the first heating element during positive half-cycles of an alternating power supply and turning on and off of the second heating element during negative half-cycles of the alternating power supply solves any stated problem or is for any particular purpose and it appears that the invention would perform equally well with the continuous alternating reciprocating full-wave cycling of the power supply to the heating elements of Schilling et al. (column 7, lines 5-26; see Figure 2).

With respect to the limitations of claims 16 and 17 and a synchronization circuit, the synchronization circuit being arranged to co-operate with the controller to provide information for controlling the actuation timing of the first and second heating elements, wherein the synchronization circuit and the controller are arranged to mitigate harmonics due to switching of actuation between the first and second heating elements at or near the zero-crossing point, Schilling et al. teach a control device (20) providing a switching (32) of waves of the characteristic (29) into waves (33, 34) during the passage (31) of the characteristic (29) through the zero line (30) (column 6, line 57- column 7, line 26). Schilling et al. further teach that such a switching process causes no acoustic or clicking pulses (i.e. harmonics) (column 2, lines 13-22). Therefore, the Walter et al., Harris et al. and Schilling control device structure fully meets “a synchronization circuit, the synchronization circuit being arranged to co-operate with the controller to provide information for controlling the actuation timing of the first and second heating elements, wherein the synchronization circuit and the controller are arranged to mitigate

Art Unit: 3742

harmonics due to switching of actuation between the first and second heating elements” at or near the zero-crossing point given its broadest reasonable interpretation.

4. Claims 6-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Polaert et al. (U.S. Patent No. 5,790,749) in view of Walter et al. (U.S. Patent No. 4,260,875), Harris et al. (U.S. Patent No. 6,393,718) and Schilling et al. (U.S. Patent No. 5,396,047) as applied to claims 1-3 and 12-17 above, and further in view of Drehler et al. (U.S. Patent No. 6,953,916).

Polaert et al. in view of Walter et al., Harris et al. and Schilling discloses all of the limitations, as previously set forth, except for the visual display including an LCD display screen including a numerical display; and the display means including a numerical displaying showing the instantaneous power of the heater and the display including an LCD display screen.

However, a visual display including an LCD display screen, is known in the art. Drehler teaches a control device for a hairdresser tool comprising a display including an LCD display screen (LCD monitor 10 included in control device 1; column 3, lines 58-65; column 5, lines 24-27; see Figure 1) to provide an efficiency mechanism to communicate the real/true status of the device to the user, thereby providing a more operationally efficient hairdressing tool.

Similarly, displaying information in a numerical display and a visual display including an LCD display screen, is known in the art. Drehler et al., for example, teach a control device for a hairdresser tool comprising optical indicators for indicating the

Art Unit: 3742

heating phase of the heater and if the target temperature is reached (column 3, lines 58-63). Drehler et al. also teach that the heating phase and target temperature may be actually indicated on the display (a display that indicates actual and target temperature is inherently a numerical display; column 3, lines 63-65). Drehler et al. further teach a visual display including an LCD display screen (LCD monitor 10 included in control device 1; column 5, lines 24-27; see Figure 1), all to provide an efficiency mechanism to communicate the real/true status of the device to the user, thereby providing a more operationally efficient hairdressing tool.

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Polaert et al. in view of Walter et al., Harris et al. and Schilling with the display including an LCD display screen of Drehler et al. to provide an efficiency mechanism to communicate the real/true status of the device to the user, thereby providing a more operationally efficient hairdressing tool. It would have further been obvious to one of ordinary skill in the art at the time of the invention was made to modify Polaert et al. in view of Walter et al., Harris et al. and Schilling with the numerical display teaching of Drehler et al. to provide an efficiency mechanism to further communicate the real/true status of the device to the user, thereby providing an even more operationally efficient hairdressing tool.

Response to Arguments

5. With respect to applicant's reply/argument that Polaert et al., Walter et al. and Schilling fail to disclose or suggest every element in the recited in applicant's claims, the

Art Unit: 3742

examiner respectfully agrees. The examiner cited Harris et al. for “the hair dryer having built-in ionizer; a visual display means on said main housing for indicating instantaneous operating conditions of said hair dryer; and the display means including graphical representations showing operating conditions of said hair dryer, said operating conditions including an indication of at least one of two fan speed levels of the hair dryer when the hair dryer is turned on and an operation status of a built-in ionizer of the hair dryer” of claim 1. The examiner further cited Drehler et al. for “the visual display including an LCD display screen including a numerical display; and the display means including a numerical displaying showing the instantaneous power of the heater and the display including an LCD display screen” of claims 6-11.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

Art Unit: 3742

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to STEPHEN J. RALIS whose telephone number is (571)272-6227. The examiner can normally be reached on Monday - Friday, 8:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tu Hoang can be reached on 571-272-4780. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Stephen J Ralis/
Primary Examiner, Art Unit 3742

Application/Control Number: 10/523,113

Page 15

Art Unit: 3742

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Art Unit 3742

SJR

November 7, 2008